REMARKS

This is in response to the Office Action dated September 27, 2005. In view of the foregoing amendments and following representations, reconsideration is respectfully requested.

By the amendment, claims 1-17 have been cancelled and replaced with new claims 18-35. Accordingly, claims 18-35 are currently pending the present application.

Next, the specification and abstract have been reviewed and revised, to make a number of clarifying and other editorial amendments. To facilitate entry of the amendments, a substitute specification and abstract has been prepared. No new matter has been added. Also enclosed is a "marked-up" copy of the original specification and abstract to show the changes that have been incorporated into the substitute specification and abstract. The enclosed copy is entitled "*Version with Markings to Show Changes Made*."

Next, on page 2 of the Office Action, claim 1 is provisionally rejected under 35 U.S.C. § 101 as claiming the same invention is that of claim 1 of co-pending application No. 10/629,544. As noted by the Examiner, the term "same invention," means an invention drawn to identical subject matter. In this case, the indicated claims of the respective applications are directed to similar subject matter; however, the claims have clear differences. In particular, the present invention, as defined in claim 1, is directed to a method of preventing heat-transfer to the collet when a heated semiconductor laser component solidifies so as to prevent residual stress in the component. In contrast, the invention defined in claim 1 of Serial No. 10/629,544 is directed to a method of re-heating

(heat again) a semiconductor laser component in order to remove residual stress remaining in the semiconductor laser component. Note, claim 1 of Serial No. 10/629,544 recites a "reheating" step (heating again), while claim 18 (corresponds to original claim 1) of the present application recites "terminating the heating operation" during the pressure bonding process.

Thus, although the objects of both inventions are similar in the sense of not leaving residual stress in the semiconductor laser component, the particular methods of solving this particular problem are quite different. As described above, the respective claims recite clearly different method steps, and thus are not directed to identical subject matter. In view of the above, the Examiner is requested to withdraw the rejection based on "same invention" double patenting.

* * * *

Next, on pages 2-3 of the Office Action, claims 1, 5, 10 and 13 are rejected under 35 U.S.C. § 102(b) as being anticipated by Hawrylo (USPN 4,576,326). Claims 2 and 4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the Hawrylo patent. And claims 11 and 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hawrylo in view of Laub et al. (USPN 3,790,738).

Initially, it is noted that the Examiner has indicated that claims 3, 6-9, 12, 14, 15 and 17 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. New claims 20, 23-26, 29, 32 and 33 correspond to allowable claims 3, 6-9, 12, 124, 15, and 17, respectively, and thus are similarly allowable.

The notice of allowable subject matter is sincerely appreciated, however, it is submitted that the method, as defined in new independent claim 18, as well as independent claim 30 are allowable over the prior art as will be demonstrated below.

Hawrylo discloses a known method of mounting a component on a submount by maximizing the uniformity of pressure applied during thermal compression (pressure) bonding. The method includes burnishing bonding pad 14 on a heat sink 12 with a collet 20. The collet is then moved to pick up a semiconductor device 16 with a bonding pad 18 thereon. The bonding pad 18 is burnished, and then the collet is moved back to the main work stage where pressure bonding of the device to the heat sink is carried out. The Hawrylo method ensures that all burnished surfaces are parallel and that pressure during the bonding is perfectly perpendicular to the parallel surfaces. Further, in col. 4, lines 17-25, Hawrylo discloses that the heat sink and/or semiconductor device are heated to an appropriate temperature, and then the collet presses the heat sink and the semiconductor device together under a desired temperature for a desired time.

However, the Hawrylo method does not include any step that would prevent heat-transfer to the collet when solidifying of the bonding member begins. Furthermore, there is no recognition of the problems that are caused by heat-transfer to the collet. Accordingly, Hawrylo does not disclose or suggest terminating the heating operation while the collet pressure bonds the semiconductor laser component to the submount, as required in claim 1. Note that claim 1 also specifies that the pressure bonding operation is carried out so as to substantially prevent transfer of heat from said semiconductor laser component to said collet. Hawrylo does not include any step that would prevent the transfer of heat.

Furthermore, claim 30 requires "releasing said semiconductor laser component from said collet upon solidification of only a part of said bonding member." Hawrylo applies pressure until the bond is completely formed. In view of the above, it is submitted that independent claims 18 and 30 are clearly allowable over the Hawrylo reference.

Laub is cited by the Examiner to teach a semiconductor bonding method which employs a low conductivity collet. Laub discloses a semiconductor die bonding apparatus including a die pickup and heater assembly 18 having a pickup/storage stage 24 and heater stage 26. A collet 28 (col. 5, lines 50-55) is operable to descend, contact and hold a desired chip 13. The collet 28 descends towards circuit board 15 until chip 13 is in contact with the board. Then localized heat is applied to the substrate by means of heating electrodes 30 which bracket collet 28, and a vibratory motion is applied to the tool arm 32 to achieve a eutectic bond of the chip to the substrate. Note that the heating electrodes 30 function to provide localized heating of an area of the substrate to which the chip is attached.

Laub clearly does not disclose or suggest terminating the heating operation while maintaining the pressure bonding process of the laser component to the submount by the collet as required in claim 18. Also, Laub does not disclose the feature of claim 30 that requires "releasing said semiconductor laser component from said collet upon solidification of only a part of said bonding member." Accordingly, it is submitted that present invention, as defined in independent claims 18 and 30, is clearly allowable over the applied prior art references.

In view of the above, it is submitted that the present application is now clearly in condition for allowance. The Examiner therefore is requested to pass this case to issue.

In the event that the Examiner has any comments or suggestions of a nature necessary to place this case in condition for allowance, then the Examiner is requested to contact Applicant's undersigned attorney by telephone to promptly resolve any remaining matters.

Respectfully submitted,

Atuhito MOCHIDA et al.

By: _____

Michael S. Huppert
Registration No. 40,268
Attorney for Applicants

MSH/kjf
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
January 27, 2006